

computers on the network storing a plurality of objects and being designated source sites, the method comprising:

running on each source site an agent program which processes the contents of objects stored on the source site and generates meta data for each processed object which describes the object;

A<sup>3</sup> transmitting the generated meta data from each host site to at least one cataloging site; and

aggregating the transmitted meta data at each cataloging site to generate the catalog of object references.

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Please add the following new claims:

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2. The method of claim 1 wherein at least one source site is also a cataloging site.

3. The method of claim 1 wherein the transmitted meta data further comprises a command to the cataloging site operable to instruct the cataloging site.

A<sup>4</sup> 4. The method of claim 1 wherein transmitting the assembled meta data comprises transmitting differential meta data indicating changes in current meta data relative to previous meta data.

5. The method of claim 1 wherein the agent program creates meta data only for selected objects on the source site, the selected objects selected by user input.

6. The method of claim 1 wherein the agent program creates meta data only for selected objects on the source site, the selected objects selected by a computer algorithm.

7. The method of claim 1 wherein the contents of at least some of the objects stored on a source site comprises nontextual data and the meta data comprises one or more vectors extracted from the contents.

8. The method of claim 7 wherein the nontextual data comprise one or more digital image files and the vectors for each object stored on a source site correspond to features in the image file.

9. The method of claim 7 wherein the nontextual data comprise one or more digital audio files and the vectors for each object stored on a source site correspond to frequency domain analysis of the audio file.

10. The method of claim 1 wherein the agent program comprises a utility program that is resident in an operating system on the corresponding source site.

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11. A method for constructing a catalog of file references on a cataloging computer connected to a computer network, the network further including a plurality of interconnected source computers each having a file system for identifying files, the method comprising:

running on each source computer, an agent program which accesses the file system of the source computer, identifies files stored on the source computer, and collects information from the contents of the identified files;

transmitting the collected information from each source computer to the cataloging computer; and

processing the transmitted collected information at the cataloging computer to generate a catalog of file references.

12. The method of claim 11 wherein the collected information comprises unprocessed contents of an identified file.

13. The method of claim 11 wherein the collected information comprises a digital signature of an identified file.

14. The method of claim 11 wherein the collected information is transmitted responsive to a request from the cataloging computer.

15. The method of claim 11 wherein the collected information is transmitted responsive to the source computer initiating the transmission.

16. The method of claim 11 wherein each source computer is also a cataloging computer.

17. The method of claim 11 wherein the transmitted collected information further comprises a command to the cataloging site operable to instruct the cataloging site.

18. The method of claim 11 wherein the agent program collects information only for selected objects on the source computer, the selected objects selected by user input.

19. The method of claim 11 wherein the agent program collects information only for selected objects on the source computer, the selected objects selected by a computer algorithm.

20. The method of claim 11 wherein the agent program further comprises a utility program that resident in an operating system on the corresponding source computer.

21. A method for constructing a catalog of object references on a cataloging computer on a computer network, the computer network further including a plurality of interconnected source computers, comprising:

running on each source computer an agent program which accesses a file system structure of the source computer and creates a data set which specifies the file system structure;

transmitting at the initiation of each source computer the data set from the source computer to the cataloging computer; and

processing the transmitted data sets at the cataloging computer to generate the catalog of object references that correspond to the transmitted data sets.

22. The method of claim 21 wherein the file system structure comprises a plurality of directory entries for files stored on the corresponding source computer.

23. The method of claim 21 wherein each source computer is also a cataloging computer.

24. The method of claim 21 wherein the transmitted data further comprises a command to the cataloging computer operable to instruct the cataloging computer.

25. The method of claim 21 wherein transmitting the data comprises transmitting differential data indicating changes in a current data set relative to a previous data set.

26. The method of claim 21 wherein only a portion of the file system structure is selected.

27. The method of claim 21 wherein only a portion of the file system structure is selected by user input.

28. The method of claim 21 wherein only a portion of the file system structure is selected by a computer algorithm.

29. The method of claim 21 wherein the agent program comprises a utility program that is resident in an operating system on the corresponding source computer.

30. A method for constructing a catalog of object references to objects on a site in a network, the network including a plurality of sites and the objects on the site not being accessible to other sites on the network, comprising;

running on the site a agent program that generates meta data from the contents of objects on the site, and

assembling the meta data to construct the catalog of object references that correspond to the contents of the objects.

31. The method of claim 30 wherein the catalog is stored on the same site as the objects.

32. The method of claim 30 wherein the catalog is assembled on a central site which is not the site where the objects are located.

33. The method of claim 30 wherein object references remain in the catalog although an object corresponding to an object reference no longer exists.

34. The method of claim 30 wherein the catalog comprises object references to objects stored on a plurality of sites, the object references aggregated and stored on a central site.

A4 35. The method of claim 30 wherein the agent program creates meta data only for selected objects on the site, the selected objects being selected by user input.

36. The method of claim 30 wherein the meta data further comprises a command operable to instruct the site.

37. The method of claim 30 wherein the contents of at least some of the objects comprises nontextual data.

38. The method of claim 30 wherein the agent program comprises a utility program that is resident in an operating system on the site.

39. A method for collecting vectors corresponding to nontextual objects stored within a network, the network including a plurality of interconnected computers with at least one computer storing a catalog, each computer storing the catalog being designated a cataloging site, and the other computers on the network storing a plurality of objects and being designated source sites, the method comprising:

running on each source site a agent program which processes the contents of nontextual objects stored on the source site to thereby generate for each

processed nontextual object one or more vectors corresponding to each nontextual object; and

transmitting the vectors from each source site to at least one cataloging site.

40. The method of claim 39 wherein the nontextual objects comprise digital image files and the vectors for each nontextual object correspond to features in the image file.

41. The method of claim 39 wherein the nontextual objects comprise digital audio files and the vectors for each nontextual object correspond to frequency domain analysis of the audio file.

A4 42. The method of claim 39 wherein the agent program comprises a utility that is resident in an operating system on the corresponding source site.

43. A method for constructing and searching a catalog of nontextual object references stored within a network, the network including a plurality of interconnected computers with at least one computer storing the index, each computer storing the index being designated a cataloging site, and the other computers on the network storing a plurality of objects and being designated host sites, the method comprising:

receiving at each cataloging site a plurality of sets of one or more vectors from a plurality of host sites, each set of vectors corresponding to a nontextual object stored on the corresponding source site, and each set of vectors being generated from processing the contents of the corresponding nontextual object;

aggregating the transmitted sets of vectors at each cataloging site to generate the catalog of object references;

applying a search query to the catalog of object references; and

comparing the sets of vectors in the catalog to the applied search query to thereby generate search results consisting of at least one reference to a nontextual object corresponding to the applied search query.

44. The method of claim 43 wherein applying the search query to the catalog of object references and comparing the sets of vectors in the catalog to the applied search query comprises:

applying a key word search to identify a representative nontextual object;  
and

correlating the set of vectors of the representative nontextual object as a template for further searches of the catalog.

A4 45. The method of claim 43 wherein processing the contents of each nontextual object comprises:

applying artificial intelligence algorithms to the contents of the objects; and  
generating a set of vectors corresponding to each object.

46. The method of claim 43 wherein the nontextual objects comprise digital image files and the set of vectors for each object correspond to features in the digital image file.

47. The method of claim 43 wherein the nontextual objects comprise digital audio files and the set of vectors for each object correspond to frequency domain analysis of the audio file.

48. The method of claim 43 wherein each nontextual object reference comprises one or more vectors corresponding to the object and an object locator that identifies the location of the object on the network.

49. The method of claim 48 wherein the object locator comprises a uniform resource locator.

50. The method of claim 43 wherein the contents of the nontextual objects are processed by a utility program that is resident in an operating system on the corresponding source site.

51. A method for constructing a catalog of object references from objects stored within a network, the network including a plurality of interconnected computers with one computer storing the catalog and being designated a cataloging site and each of the other computers storing a plurality of objects and being designated a source site, the method comprising:

receiving at the cataloging site, meta data about objects stored on each source site, the meta data generated by an agent program stored on each source site, the agent program processing objects stored on the host site and generating corresponding meta data; and

processing the received meta data at the cataloging site to generate the catalog of object references.

52. The method of claim 51 wherein the transmitted meta data further comprises a command to the cataloging site operable to instruct the cataloging site.

53. The method of claim 51 wherein the agent program creates meta data only for selected objects on the source site, the selected objects being selected by user input.

54. The method of claim 51 wherein the agent program comprises a utility program that is resident in an operating system on the corresponding source site.

55. A computer-readable medium containing computer-executable instructions for generating object references to objects stored on a host site in a network, the network including a plurality of interconnected computers with at least one computer storing a catalog of object references, each computer storing the catalog being designated a cataloging site, and the other computers on the network storing a plurality of objects and being designated source sites, the computer-executable instructions operable for:



receiving at the cataloging site meta data corresponding to objects stored on each source site, the meta data generated by an agent program stored on each source site; and

processing the received meta data at the cataloging site to generate the catalog of object references.

56. The method of claim 55 wherein the transmitted meta data further comprises a command to the cataloging site operable to instruct the cataloging site.

57. The method of claim 55 wherein the agent program creates meta data only for selected objects on the source site, the selected objects being selected by user input.

58. The method of claim 55 wherein the agent program comprises a utility program that is resident in an operating system on the corresponding source site.

59. A computer-readable medium containing a computer-executable instructions for generating object references to objects stored on a host site in a network, the network including a plurality of interconnected computers with at least one computer storing a catalog of object references, each computer storing the catalog being designated a cataloging site, and the other computers on the network storing a plurality of objects and being designated source sites, the computer-executable instructions operable for:

processing the contents of objects stored on each source site;

generating meta data from the processed contents of each object, the meta data corresponding to contents of the object;

transmitting the generated meta data from each source site to at least one cataloging site; and

processing the transmitted meta data at each cataloging site to generate a catalog of object references corresponding to objects on each source site.

60. The computer-readable medium of claim 59 wherein each source site is also a cataloging site.

61. The computer-readable medium of claim 59 wherein the transmitted meta data further comprises a command to the cataloging site operable to instruct the cataloging site.

62. A computer-readable medium containing a computer-executable instructions for generating file references to files stored on a source computer on a computer network, the network including a plurality of source computers each having a file system for identifying files and also including a cataloging computer storing a catalog of file references to files stored on the source computers, the computer-executable instructions operable for:

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accessing the file system of each source computer to identify files stored on each source computer;

collecting information corresponding to the contents of the identified files;

transmitting the collected information from each source computer to the cataloging computer; and

processing the information at the cataloging computer to generate the catalog of file references corresponding to the collected information.

63. The computer-readable medium method of claim 62 wherein the collected information comprises a digital signature of an identified file.

64. The computer-readable medium of claim 62 wherein the collected information is transmitted responsive to a request from a cataloging computer.

65. The computer-readable medium of claim 62 wherein the collected information is transmitted responsive to a source computer initiating the transmission.

66. A computer-readable medium containing computer-executable instructions for generating object references to objects stored on source computers in a

computer network, the network including a cataloging computer storing a catalog of object references and further including a plurality of interconnected source computers, the computer-executable instructions operable for:

accessing a file system structure of a source computer;

creating a data set specifying the file system structure of the source computer; and

transmitting the data set from the source computer to the cataloging computer for processing at the cataloging computer to generate the catalog of object references corresponding to the file structure.

67. The computer-readable medium of claim 66 wherein the file system structure comprises a plurality of directory entries for files stored on the corresponding source computer.

68. The computer-readable medium of claim 66 wherein each source computer is also a cataloging computer.

69. The computer-readable medium of claim 66 wherein the transmitted data set further comprises a command to the cataloging computer operable to instruct the cataloging computer.

70. The computer-readable medium of claim 66 wherein transmitting the data set comprises transmitting differential data indicating changes to the transmitted data set relative to previously transmitted data set.

71. A computer-readable medium containing computer-executable instructions for constructing a catalog of object references about objects stored on a source site in a network, the network including a plurality of sites, the objects on the source site not being accessible to other sites on the network, the computer-executable instructions operable for:

generating meta data corresponding to the contents of objects on the source site; and

assembling said meta data to construct a catalog of object references.